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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/25/2001

Wolfgang Dultz

2345/154

2150

26646

7590

10/09/2003

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EXAMINER

WARREN, MATTHEW E

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/830,757

Applicant(s)

DULTZ ET AL.

Examiner

Matthew E. Warren

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-15, 18-22, 25 and 26 is/are rejected.
- 7) ☒ Claim(s) 16, 17, 23 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 15 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The limitation of the liquid crystalline mixture FLC-388 is mentioned in the specification but not properly described in terms of chemical composition. It is not understood if FLC-388 denotes a trademarked product or the applicant's own name for a mixed ferroelectric liquid crystal. In any case, one of ordinary skill in the art would not be able to find or duplicate such a material because the basic composition is not disclosed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claims 15 and 22 contains the trademark/trade name FLC-388 . Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a ferroelectric liquid crystal and accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims rejected under 35 U.S.C. 103(a) as being unpatentable over Funfschilling et al. (US 6,606,134 B1) in view of Shashidhar et al. (US 5,293,261).

In re claims 13 and 20, Funfschilling et al. discloses (col. 4, lines 8-14) an optical liquid crystal modulator and a method of operating the modulator, comprising a ferroelectric liquid crystal which has a DHF mode. Funfschilling shows all of the elements of the claim except the operating range of the electric field. Shashidhar et al.

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discloses (col. 4, lines 51-63) a liquid crystal device which exhibits an operating range of an electric field of up to 3×10^5 V/cm (equal to 30 V/ μ m) which is more than the electric field minimum listed in the claims. Such a field strength is required to induce fast switching of the ferroelectric (abstract). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify liquid crystal ferroelectric of Funfschilling by increasing the electric field as taught by Shashidhar to induce faster switching of the ferroelectric material.

In re claims 14 and 21, Funfschilling et al. discloses (col. 4, lines 8-14) an optical liquid crystal modulator and a method of operating the modulator wherein the LC modulator is configured as a $\lambda/2$ magnification plate (col. 5, lines 52-64) and produces a tilt angle (or switching angle) of + 22.5 degrees (col. 5, lines 43-49).

In re claims 15 and 22, the claim is indefinite as stated in the 112 Rejection above.

Claims 18, 19, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funfschilling et al. (US 6,606,134 B1) in view of Shashidhar et al. (US 5,293,261) as applied to claims 13 and 20 above, and further in view of Sharp et al. (US 5,627,666).

In re claims 18, 19, 25 and 26 Funfschilling and Shashidhar show all of the elements of the claims except the specific driving frequency. Sharp et al. discloses (col. 6, lines 10-32) a liquid crystal modulator and a method of operating the modulator in which a driving voltage is applied at a driving frequency over 50 kHz to vary the LC tilt

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angle. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the liquid crystal modulator of Fuenfschilling and Shashidhar by driving the voltage at a frequency over 50kHz as taught by Sharp to apply the necessary electric field for change of the tilt angle.

Allowable Subject Matter

Claims 16, 17, 23, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Beresnev et al. (US 5,770,109) and Fuenfschilling et al. (JP 10-221718) also disclose ferroelectric liquid crystals that operate in a DHF mode.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Warren whose telephone number is (703) 305-0760. The examiner can normally be reached on Mon-Thurs, and alternating Fri, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Matthew E. Warren



September 29, 2003